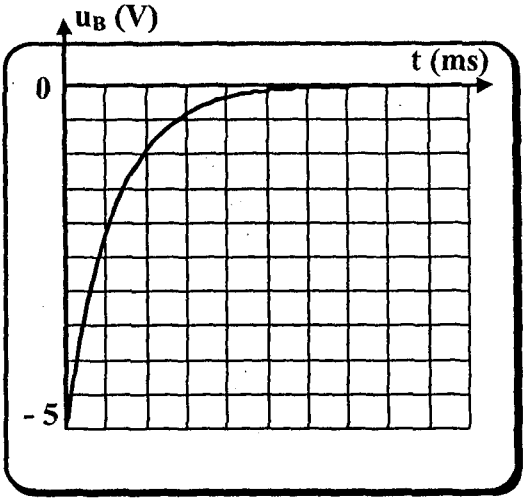
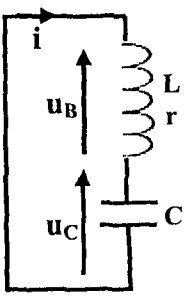
b) $u_B(t) = -10.\frac{9}{18}e^{-\frac{t}{0,7.10^{-3}}} = -5\,e^{-1428,57\times t}$.



B.



1) Loi des mailles : $u_B + u_C = 0 \Leftrightarrow L\frac{di}{dt} + r\,i + u_C = 0$.

$i = C\frac{du_C}{dt} \Leftrightarrow L\,C\frac{d^2u_C}{dt^2} + r.C\frac{du_C}{dt} + u_C = 0$.

2)

a) L'amplitude diminue au cours des oscillations $\Leftrightarrow$ Les oscillations sont dites pseudopériodiques.

b) $6\,T = 13,62.10^{-3}s \Leftrightarrow T = \frac{13,62.10^{-3}}{6} = 2,27.10^{-3}s$.

c) $u_{Ci_{max}} = u_{C(i-1)_{max}}(1-\frac{23}{100})$

t	$5\frac{T}{4}$	$9\frac{T}{4}$
u_C (V)	- 4,62	- 3,557

d) $n = \frac{\Delta t}{T} = \frac{18,16.10^{-3}}{2,27.10^{-3}} = 8 \Rightarrow$ L'oscillateur effectue 8 oscillations.

e) $U_{C\max_t} = (1-0,23)^n.U_{C\max_0} = (0,77)^8.6 = 0,7414V$.

f) C'est la note La_3, d'après la valeur de la pseudo période $T \approx 2,272.10^{-3}$s.

Qarray.tn Agra Blech- Qarray.tn